DOCUMENT RESUME

ED 091 901 EC 062 058

AUTHOR	Prokofyev, M.
TITLE	Public Education: USSR Yesterday, Today, Tomorrow.
PUB DATE	[72]
NOTE	119p.; For related documents, see EC 062 052-057
EDRS PRICE	MF-$0.75 HC-$5.40 PLUS POSTAGE
DESCRIPTORS	Cocurricular Activities; *Curriculum; Early Childhood Education; *Educational Philosophy; *Educational Programs; Elementary Education; Foreign Countries; Historical Reviews; Public Policy; *Public Schools; Secondary Education; Teacher Education; Technical Education; Universities; Vocational Education
IDENTIFIERS	*Union of Soviet Socialist Republics; USSR

ABSTRACT

The booklet describes the development and current status of public education in the Soviet Union. Readers are reminded that the 22 million square kilometers and the more than 100 nationalities speaking 108 languages complicate organization of an educational system embodying traditional progressive democratic education and postrevolutionary socialist changes. It reviews the history of Soviet education including pre-1917 literacy (28.4 percent), introduction of compulsory education in 1930, and present school enrollment of 49 million pupils. Basic educational principles are given to be state support, equal opportunities for all nationalities, equality of sexes, a unified school system, separation of church and schools, and contact between school and society. The author reviews educational theories of Lenin, N. Krupskaya, and A. Makarenko. He discusses preschool education, the 8-year school, and the secondary school; school programs, curriculums, and textbooks; pedagogical science; vocational and academic orientations; three aspects of education (ethical, aesthetic, and physical); educational establishments such as Young Pioneer Palaces and Houses that serve young people; the roles of family and society; postsecondary school specialization; the training of teachers; responsibilities of Soviet ministries for education; and international contacts. Appendixes contain tables showing school enrollment figures, the standard curriculum, numbers of textbooks published, and number of graduates from higher and secondary specialized schools. Included are photographs of school settings. (MC)

USSR

YESTERDAY

TODAY

TOMORROW

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED 091901

PUBLIC EDUCATION

ED092093

Mikhail Prokofyev is the USSR Minister of Education. A scientist and teacher, Dr. Prokofyev also heads the Department of Natural Compounds at Moscow University, and successfully combines scientific research with social and state activity.

Dr. Prokofyev is a Corresponding Member of the USSR Academy of Sciences and a Member of the USSR Academy of Pedagogical Sciences. He is the author of over 120 papers in the field of chemistry. In this booklet Dr. Prokofyev tells how public education was first organized in the USSR, what problems it has faced, and what it has accomplished in 53 years under the Soviet system.

ED 091901

M. PROKOFYEV
Minister of Education

PUBLIC EDUCATION

NOVOSTI PRESS AGENCY
PUBLISHING HOUSE
MOSCOW

CONTENTS

FOREWORD	5
EDUCATION FOR ALL	7
BASIC PRINCIPLES	11
TRADITIONS AND NEW EXPERIENCE	13
STAGES OF EDUCATION	23
PROGRAMMES, CURRICULA, TEXTBOOKS	31
PEDAGOGICAL SCIENCE	35
SCHOOL AND LIFE	42
THREE ASPECTS OF EDUCATION	49
EDUCATIONAL ESTABLISHMENTS SERVING YOUNG PEOPLE	53
FAMILY AND SOCIETY	56
AFTER FINISHING SECONDARY SCHOOL	59
TWO AND A HALF MILLION	65
LEADING BODIES OF SOVIET PUBLIC EDUCATION	73
INTERNATIONAL CONTACTS	74
CONCLUSION	78
APPENDIXES	80

Foreword

People interested in the development of Soviet industry and agriculture usually want to know something about public education in the USSR.

Interest in the Soviet educational system was heightened when a Soviet citizen became the first man in history to fly in outer space, when the Soviet Union, a land where literacy and culture before the October Revolution were a privilege of the few, became the pioneer in space exploration.

This booklet describes how we began and what we have achieved in the educational field. Here it is necessary to remind the reader that the Soviet Union is a large country covering territory of 22.4 million square kilometres; this complicates organization of any large-scale undertaking, especially public education. Then one should also keep in mind that the Soviet Union is a multinational state comprising over a hundred peoples and nationalities speaking 108 tongues, of which 48 nationalities had no written language of their own before the Revolution.

The Soviet educational system is based both on

the country's traditions of progressive democratic education and new socialist changes introduced after the Revolution.

Like any other field of activity in the Soviet Union, public education develops in accordance with what is demanded of it by society—by progress in science and technology, by the cultural advancement of the people, by the communist attitude to work.

The Soviet Union readily shares its experience in the educational field with other countries. On their part, Soviet secondary and higher school teachers try to apply in their work all that is useful in the field of pedagogy.

Fifty-three years, or less than a lifetime of one generation, is a very brief period from the point of view of history. This makes all the more significant the achievements of the Soviet people within such a short period of time in the field of education.

EDUCATION FOR ALL

The level of literacy, the number of schools and pupils are basic indicators of the state of public education in a country and of its general cultural level. In the educational field pre-revolutionary Russia was a backward country. The 1897 census showed that among people of over nine years of age only 28.4 per cent could read and write.

On the outskirts of the Russian Empire inhabited by non-Russian peoples the situation was even worse. Among the Central Asian peoples—Uzbeks, Tajiks, Kirghiz and Turkmens—no more than two or three per cent of the people were literate.

This immense Empire with a population of nearly 150 million had, according to the 1911 census, only 150 thousand teachers, 60 thousand of whom were instructors in theology, i.e. priests. The total school enrolment was about eight million.

Long before the October Revolution the working masses demanded radical educational reforms and free compulsory schooling. But these

just demands were ignored by the tsarist government.

The children of workers, peasants, artisans, small shopkeepers, etc. were not admitted to the Gymnasiums. "God be praised!" the tsar exclaimed when he learned that nearly all peasants recruited into the army could not read.

According to estimates by tsarist officials, the magazine *Vestnik Vospitaniya* (Education Gazette) reported in 1866, it would take at least 180 years to wipe out illiteracy among Russia's male population and 300 years, among the women, and thousands of years in the country's outlying areas.

The 1917 October Revolution opened up an era of popular education. In November 1917, a few days after the victory of the Revolution, the Soviet Government defined the principles concerning public education in the country: education should be universal, free and compulsory for children of both sexes; teachers should be provided with the necessary material conditions for carrying out their work, etc.

Despite economic hardships caused by the Civil War and foreign intervention, the young Soviet republic tackled with great energy the question of public education. Many new schools were built, and teachers' courses were organized. Literacy classes for adults were conducted in all parts of the country. Numerous libraries, workers' clubs and reading rooms were opened; those in the countryside became the centres of cultural activities.

On December 26, 1919, on Lenin's initiative, the Council of People's Commissars issued a decree on the eradication of illiteracy, making it

obligatory on the entire population from the age of 8 to 50 to learn to read and write either in their own or in the Russian language. Tens of thousands of teachers, students, pupils and office employees joined in the literacy drive. The Young Communist League was especially active. Everywhere YCL members organized campaigns for putting an end to illiteracy, helped build schools and worked as teachers.

Evening literacy classes were conducted at schools, workers' clubs, at every factory, and in every village. The classes varied from 3 to 30 people, some classes consisted of only one pupil. It was a real nation-wide drive against illiteracy.

In 1930, universal and compulsory four-year schooling was introduced for all children aged eight years and over, and seven-year compulsory schooling for those living in industrial towns and districts and workers' settlements.

Large-scale construction of schools began, many teachers' training courses were opened and textbook publishing was stepped up. From 1930 on the number of children enrolled in schools grew by 3-3.5 million a year.

In 1932, 7.6 million adults attended literacy classes and 6.5 million went to schools for the semi-literate. Literacy rose from 67 per cent in 1930 to 90 per cent in 1939. The number of people who could read and write continued to increase until illiteracy was completely eradicated.

When the Second World War broke out the Soviet Union held first place in the world in the number of students and schoolchildren. Enrolment in Soviet general schools was 20 per cent

higher than in Britain, Germany, France and Italy taken together.

The war and the nazi occupation inflicted immense damage on Soviet public education. In occupied areas the nazis burned down, wrecked and plundered 82 thousand schools with a total enrolment of 15 million, and destroyed 334 institutions of higher learning, hundreds of museums, thousands of libraries and cultural clubs.

But throughout the war on the territory not occupied by fascists schools remained open. The Government continued to devote serious attention to public education and took important measures to carry out universal and compulsory education.

In the 1944-45 academic year, the school age was lowered from eight to seven years, bringing more pupils into the first form. War-ravaged schools were quickly rebuilt and supplied with equipment and teaching aids, and construction of new schools was begun on a large scale.

At the beginning of the 1960-61 academic year nearly 37 million pupils attended general schools. Today the country's 202,000 schools have an enrolment of 49 million pupils (figures for each union republic are given in Appendix 1).

The question of universal secondary education was considered in the Soviet Union before the Second World War. It was planned to introduce it first in cities and major industrial centres, then throughout the country. But, the war prevented the plans from being carried out.

How is universal secondary education being implemented in the Soviet Union? Today the

number of young people who have finished the complete secondary school is steadily increasing. Over sixty per cent of the young people who have completed the eight-year day-time school go on to senior forms. Their numbers will rise in the years to come, and many more schools will have to be built.

More young men and women will enter schools which provide general secondary education as well as vocational training. Among these are specialized secondary schools known as technicums and certain vocational training schools. The former train average-level specialists, and the latter—skilled workers.

BASIC PRINCIPLES

The Soviet educational system is based on the following democratic principles:

State support for education. Since all schools and other educational institutions are set up, maintained and guided by the state, a uniform level of training, efficient planning, material security, a single curriculum and continuity are ensured. A state-supported system of education precludes disorganization, dependence on private or public charity and the use of the school for commercial or other purposes which interfere with its proper functioning.

Equal opportunities for all peoples. People of all nationalities of the USSR have equal rights in enrolling in the country's educational esta-

blishments, they may, if they wish, study in their native language, and receive an education on any level, including higher education, in their own republic.

Equality of sexes. Boys and girls, young men and women study together in all Soviet schools and colleges. School-leavers of both sexes have the same opportunities, and girls are admitted to schools of higher learning on the same basis as boys. Male and female teachers draw the same salaries for the same work, and no difference is made in granting them pensions, seniority allowances, etc.

A unified school system. In place of different types of schools which served different social groups in old Russia, there is a single, unified school system for all citizens of the USSR. We have no "dead-end" schools which rule out further education. There is complete continuity between all links and stages of the public education system.

Complete separation of school and other educational and training institutions from the church. In the USSR the church is separated from the state and the school from the church. Education is based on freedom of conscience and a scientific, materialist outlook.

Broad contacts between school and society. Every school has a parents' committee elected by the parents themselves at the beginning of each academic year. Educational questions are widely discussed by the Soviet public. The trade unions, the Young Communist League and other public organizations actively participate in the work of schools and other educational institutions.

TRADITIONS AND NEW EXPERIENCE

Education in pre-revolutionary Russia developed at a time of political ferment. In defiance of the policy of the tsarist government, teachers influenced by the revolutionary-democratic ideology of V. G. Belinski, A. I. Herzen and N. G. Chernyshevski joined forces with other progressive people in an effort to improve the country's educational system. They organized Sunday classes and advanced courses for women; these played an important role in promoting women's education, training intellectuals from among workers, and furthering the revolutionary liberation movement.

Within Russian bourgeois society a new progressive culture emerged. Among the outstanding writers, scientists and scholars of the time were Leo Tolstoi, N. I. Pirogov, D. I. Mendeleyev, and K. D. Ushinski, whose works and ideas remain in many respects significant today. But these were isolated achievements against a background of general backwardness; they were only the beginnings of a new cultural process that lay ahead.

Lenin's works and speeches on the upbringing of the young laid the foundation of Soviet education. In his speech at the First All-Russia Education Congress held in Moscow in August 1918, Lenin defined the class character of the school and the ideological essence of education, and the role of the school in Soviet society. He said that Communists, and all Soviet people were of the belief that "school outside of life, outside of politics, is a lie and hypocrisy."

Formulating the tasks awaiting the Soviet school, Lenin said that the psychology and attitudes of people in the new society would be determined by the kind of education and upbringing they had, and that it was necessary to instil in the young the communist attitude to work.

In his speech, "The Tasks of the Youth Leagues," at the Third Congress of the Young Communist League, Lenin discussed the question of what and how Soviet youth should study, how they should train themselves to be active and politically conscious builders of the new society.

Most important of all, he said, young people should apply themselves to acquiring a knowledge of the best in the cultural sphere that man had produced. This process of learning, moreover, must not be a mechanical act, but a process of absorbing, with critical awareness, man's cultural heritage.

Learning in the new school, said Lenin, should be different from the old way of acquiring knowledge. There should be no "sloganeering," no memorizing of ready-made conclusions. Young people must learn how to analyze facts and approach all subjects critically.

The socialist state needs not only people who are educated but people with convictions. It is the task of the school to mould the views of the students and help them form convictions on the basis of knowledge scientifically derived. Such knowledge is necessary for building a new life.

The old schools gave students book knowledge divorced from practice. Lenin said at the Third YCL Congress that it was necessary "...that every day, in every village and city, the young peo-

ple shall engage in the practical solution of some problem of labour in common, even though the smallest or the simplest."

Lenin emphasized, that no school or even university, which did not provide practical training, would be of much worth. "We could not believe in teaching, training and education if they were restricted only to the schoolroom and divorced from the ferment of life," said Lenin. That is why Soviet educational establishments not only prepare students for coping with complex situations in life but also teach them practical skills and develop in them an ability to work for the good of society as a whole.

Lenin discussed many questions concerning education at a Party Conference on public education held in December 1920-January 1921. Some delegates at the conference proposed cutting the last two years of secondary schooling and thus reducing the age of completing general and polytechnical schools from 17, as was set in the Party Programme, to 15 years. In his article "On the Work of the Commissariat of Public Education," however, Lenin warned against premature specialization and suggested that in all vocational schools more time be given to general subjects besides technical and political subjects.

Lenin showed deep concern about the education of young people and personally participated in the organization of the Soviet public education system. This can be seen from his speeches at various teachers' conferences and from his letters to the Commissariat of Public Education.

Lenin's ideas on methods of teaching and bringing up young people are of basic impor-

tance for the development of Soviet education and pedagogy. Instead of cramming and drilling, instead of giving students knowledge without at the same time cultivating in them the ability to use it, Soviet schools employ teaching methods that foster in the young people a communist outlook, and this is only possible when knowledge is considered as a guide to action.

The old school taught young people that private property is sacred, and instilled in them bourgeois individualism based on the principle: "Man is to man a wolf"; "Your own welfare is everything, nothing else matters."

Communist morality is based on the freedom of workers from any form of exploitation. It consists of collectivism and a socialist, creative attitude towards labour. To foster communist morality in young people does not mean making exhortatory speeches to them. What is important is to overcome all survivals of the past in the minds of people and in their behaviour, and to help them consciously to reject individualist, petty-bourgeois psychology, for the sake of the successful building of communism.

What Lenin said about the art of propaganda and agitation equally applies to the art of teaching. Every Soviet teacher strives to present his material in such a way that it will be clear and convincing, to enable the growing generation to have a firm grasp of what they are taught.

Lenin considered it highly important that a student should be able to think and work on his own. His lecture "The State" contains practical advice on how to study a subject. When reading a book, listening to a lecture or having discussions with a lecturer one may come across

points which are not clear to one. Such points should be noted down so that one can think over them when reading the book for the second time or during further discussions with the teacher, until everything is clear in one's mind.

In pre-revolutionary Russia the schools did not teach students how to acquire new knowledge. On leaving school a student had a certain amount of knowledge but did not know how to apply it in life or how to expand it.

A subject constantly discussed in pre-revolutionary pedagogical literature was: what was the more important function of the school—to give the students a certain amount of knowledge or to teach them how to acquire knowledge on their own irrespective of its amount? The question reflected the main contradictions between education and life, between the hidden and apparent aims of bourgeois upbringing.

From the point of view of Marxism-Leninism such contraposition is untenable since one cannot exist without the other—knowledge without methods or methods without knowledge.

Lenin often noted that it was impossible to acquire knowledge without thoroughly mastering the material in question and drawing conclusions from it. To avoid superficiality students must know historical facts.

Lenin emphasized the role of the teacher in bringing up the rising generation.

In his speech to the All-Russia Congress of Teachers-Internationalists in June 1918 Lenin said: "The task of the new pedagogics was to link up teaching activities with the socialist organization of society."

In some of his speeches in 1920 Lenin called

on the Chief Political Education Department to draw more teachers into its work and, above all, to draw them closer to the Party, to interest them in the work of Communists building a new society.

In his article "On the Work of the Commissariat for Public Education" Lenin said that teachers should be given leading posts in the public education system. The most responsible post, he thought, should be given to an experienced teacher who had achieved good results in his work.

Lenin considered that the main task of a teacher consisted in preparing the younger generation for the work of building a new life. He wrote in his "Pages from a Diary": "Our school teacher should be raised to a standard he has never achieved, and cannot achieve, in bourgeois society... We must strive for this state of affairs by working steadily, methodically and persistently to raise the teacher to a higher cultural level, to train him thoroughly for his really high calling and—mainly, mainly and mainly—to improve his position materially."

The Communist Party has successfully carried out Lenin's behests by improving the material position of teachers and raising their cultural and educational level.

Lenin's wife, Nadezhda Krupskaya, with her vast experience as a teacher, made a major contribution to the development of education in the USSR. One of her books, "Public Education and Democracy," became, according to Anatoli Lunacharski, the first People's Commissar of Education, the basic textbook of Soviet teachers. In another work Krupskaya noted, that the people,

having thrown off the yoke of bourgeoisie and liberated themselves from slavery, needed schools that would bring up free, strong and able people, and not lords and slaves.

An active member of the People's Commissariat of Education of the Russian Federative Republic and chairman of the pedagogical section of the State Scientific Council, Krupskaya took part in directing educational, training and scientific institutions in the republic. In 1931, she was elected an Honorary Member of the USSR Academy of Sciences and in 1936 awarded the title of Doctor of Pedagogical Sciences.

Krupskaya considered it highly important that there should be a unified vocational school system and that the masses should participate in the work of schools. She continued to work towards these goals until the end of her life. In 25 years, from 1910 to 1936, she published over a hundred works on vocational education.

At a meeting in early 1918 of the Big State Commission formed to work out the principles for a new, socialist school system, Krupskaya said that pupils should participate in productive work and have a first-hand knowledge of modern engineering facilities and methods. This could be done with the help of every power station, every sewing machine, every farm implement, every shop or factory. The pupils should know how machines worked. What the country needed, Krupskaya pointed out, were not narrow specialists, but people capable of tackling any job. Technical knowledge was not a separate subject in itself; it should be reflected in all school subjects—physics, chemistry, the natural and social sciences. At the same time she warned against

interpreting polytechnical education wrongly as a process of acquiring skills but no deep knowledge of any one subject.

Krupskaya used to say that it was necessary to fight old conceptions of physical labour as something to which millions of people forsaken by God were doomed. It was necessary to fight the notion that one must try to enter a higher institution at all costs, to become an engineer. Such notion, said Krupskaya, was in some ways a reflection of the old patronizing attitude towards people who did physical work.

Krupskaya believed that the masses should take part in the work of the school, in the upbringing of children. Workers and peasants should meet with schoolchildren and tell them about revolutionary struggle, about the difficulties they had to overcome. The younger generation should know what their elders fought for, so that it could continue their cause.

Krupskaya often pointed out that the role of the teacher was the most important in solving the great tasks confronting the schools. The advanced section of teachers immediately supported the Soviet power after the October Revolution and joined in the struggle for the creation of a new type of school. But there were others who at first failed to understand their role and place in the new conditions. And only later, after taking part in social work and coming into closer contacts with workers and peasants, did they realize that Soviet power meant the power of the working people, i.e. their power.

Krupskaya was a great friend of Soviet teachers and their adviser. She felt constant concern for their needs. Many teachers approached her

with various requests and always found understanding and help.

Krupskaya attached great importance to the Young Communist League which was the mainstay of teachers at school. Krupskaya instilled in the young people Soviet patriotism, loyalty to their socialist motherland and readiness to defend it to the last.

Krupskaya did much in drawing YCL members into the work with schoolchildren. She was one of the organizers of the young pioneer movement and kept up a correspondence with many young pioneers. These letters were friendly talks between an elder person and children. Her "Letters to Young Pioneers" are among the best in Soviet pedagogical literature.

Mikhail Kalinin, Chairman of the Presidium of the USSR Supreme Soviet, was an enthusiastic propagandist of Soviet pedagogical methods. In numerous speeches before teachers and young people he stressed that socialist society needed well-educated people capable of operating modern equipment and furthering scientific progress, and called on teachers to inculcate in the young communist convictions, patriotism, honesty, courage, a collective spirit and industriousness.

Many valuable ideas about Soviet schools and Soviet education are contained in the works of Anatoli Lunacharski. "The pedagogical process," he wrote, "is also a work process, and therefore one must know in which direction he is going and what he wants to make out of his material. If a goldsmith makes a mess of his work, the gold can be molten down. If precious stones are spoiled they are rejected; but in our eyes even

the largest diamond is no more valuable than a newly born man. Spoiling a human being is either a monstrous crime or an immense, though unwitting, guilt. . ." What kind of person do we want to bring up? Lunacharski's answer was: we must bring up a harmoniously developed person, we must make a fighter out of a child.

Anton Makarenko, an outstanding writer and teacher, and author of "Pedagogical Poem," did much for Soviet education; particularly important was his work on methods of communist upbringing.

The training of the new man was Makarenko's chief concern. He used to say that he came to literature from the pedagogical front. He believed that children should be educated in the collective, and this belief he carried out in his work as a teacher.

In the eight years that he was in charge of a colony for juvenile delinquents, Makarenko built a disciplined and energetic collective bound together by ties of friendship. His motto was: "Show a man as much respect as possible, and demand the utmost of him." He demanded from his pupils resourcefulness, purposefulness, social activity and respect for the collective and its interests.

Makarenko worked together with many young teachers who shared his views. Makarenko was convinced that however talented a person might be, however brilliant he might have been as a student in a teachers college, he could not become a good teacher until he had had a good deal of experience in teaching.

Makarenko's "Pedagogical Poem" is about the

dedication of Soviet teachers and the upbringing of a new man.

In his article written on the occasion of the fifth anniversary of the founding of the commune named after Felix Dzerzhinsky, Makarenko described a member of the commune, an educated person and one skilled in his trade, a conscious master of his country, a YCL member and a Bolshevik, an organizer and a commander, capable of giving orders and carrying out orders, of fighting and creating a person who loves life and knows how to live—such is the prototype of the future man.

STAGES OF EDUCATION

Today the Soviet system of pre-school and school education is as follows.

Kindergartens. From the very first the Soviet state made pre-school education part of a unified system of education.

In 1914, Russia had only 275 pre-school establishments, out of which 150 were kindergartens attended by four thousand children. After the October Revolution pre-school education became a major concern of the state. In the period from 1918 to 1940 some 24 thousand kindergartens were built attended by over 1,170 thousand children. During the Second World War the fascists destroyed and plundered many pre-school institutions.

In the post-war period the number of pre-school institutions rapidly increased. Damaged buildings were repaired, and new kindergartens,

creches and medical institutions were built. In 1968, the country had some 100 thousand year-round state and collective farm pre-school institutions attended by nine million children and staffed by over 506,000 teachers and doctors; in the same year over 2.5 million children went to seasonal nurseries and specially organized kindergartens located in parks.

Kindergartens are a great help to Soviet women who account for three-quarters of the country's doctors and teachers, nearly half the students and one-third of the engineers and scientists. Kindergarten accommodations place no strain on the family budget, since the state covers all maintenance expenses, the parents paying only part of the cost of the child's food.

State-run pre-school educational institutions are beneficial to the children themselves. Today few young children are left unattended or have to be minded by their brothers or sisters. Trained teachers and doctors watch over the children's health and see to their all-round physical and intellectual development.

Soviet experience shows that children in kindergartens are healthy and acquire many good habits including those of living in a collective. Socialist upbringing does not lessen, but rather deepens the children's love and attachment for their parents.

All work with children in kindergartens is conducted in their native language. Most kindergartens operate from 8 a.m. to 7 p.m. There are also round-the-clock kindergartens.

The headmistress of a kindergarten must be a trained teacher, with at least five-year expe-

rience and special medical training. Teachers must be graduates of a teachers college.

The programmes and methods of teaching in kindergartens are determined by a special manual.

Children of kindergartens are usually divided into three groups: junior—three-five years of age, middle—five-six years and senior—six-seven years.

Their physical training includes health-building and development of physical agility. They are taught hygienic habits. The requirements of hygiene are considered when buildings are equipped and furnished. The children's diet and regimen are worked out scientifically, as are measures to prevent and treat disease.

The kindergarten child is taught to feed himself unassisted, to wash and dress himself, to keep his things clean and orderly, make his bed and take care of his toys. All this is designed to develop in the child good behaviour habits.

For three-four hours every day the children take part in outdoor games, during which the teachers help them develop their abilities and initiative and learn the value of friendship and group activity. During study sessions they learn correct speech, counting, drawing, building with blocks, singing and rhythmic movements and in general get to know the world around them.

In the kindergarten a child begins to develop a wish to go to school and learn to do not only what is interesting but also what is necessary. The adoption of a new curricula by the secondary schools and the reduction of the primary course from four to three years have increased

the role of kindergartens in preparing children for school.

Kindergartens operate in close contact with parents. Parents-teachers meetings are held regularly to discuss problems of bringing up children in kindergartens and in the family.

Eight-year school. Incomplete secondary general school gives the pupils the fundamentals of general and polytechnical knowledge, instils in them industriousness and readiness to undertake socially useful activity. Here pupils aged seven to 15-16 years are also taught a sense of moral responsibility and given esthetic and physical training. Eight-year schooling was first introduced in 1958, and made compulsory in 1963 in place of the seven-year schooling.

Eight-year schooling consists of two stages: primary—forms one-three, and secondary—forms four-eight.

Schooling in forms one-three is elementary; one teacher giving instruction in all subjects for 24 lessons a week. The teachers' councils of some schools allot two teachers to two primary forms, each taking a certain number of the subjects. For example, all Russian language lessons are taught by one teacher while arithmetic and other subjects are taught by another. The one-teacher system, however, is generally favoured. For music, singing, drawing and sport there are special instructors.

The basic subject in the primary school is the native language; in areas with a non-Russian population, the primary school pupil may, if he wishes, learn Russian besides his native language. Language takes up nearly half of the total teaching time.

Other subjects include mathematics (one lesson a day), drawing and music (one lesson a week of each), physical culture and manual work (two lessons a week of each). Fourth-formers also take natural science and history (two lessons a week of each).

Primary schooling develops the pupils' cognitive abilities and teach the pupils how to learn. It also helps the pupils develop morally and spiritually. Anton Makarenko believed that the fundamental traits of a child's behaviour are formed by the age of five. If a child is not properly brought up during this period, it would take much effort to re-educate him in later years.

This is particularly true with respect to developing in the child good work habits. Every child entering school should know that he must study in order to be able later to work for the good of society, that all socially useful work is honourable, that it is through work that people obtain what they need, and that shirking work is shameful. This applies to all work, including study.

The primary school curricula include various kinds of duties the children must perform—tidying the classroom, hygiene duty, watering the pot plants in the classroom, and, beginning with the third form, working in the school canteen and school garden, helping aged pensioners and their families, etc. In rural areas primary school children are encouraged to collect medicinal herbs, pick mushrooms, berries, seeds, etc.

In the primary school pupils learn to appreciate nature and good books, music and the pictorial arts, and acquire elementary behaviour habits (neatness and tidiness, politeness, correct

behaviour in the street and in public).

In the fifth-eighth forms a programme of studies is undertaken in the natural and social sciences, polytechnical education is commenced, elements of a materialist outlook are taught while instruction in manual labour, physical culture and the arts is continued.

The curriculum includes the native language, Russian and literature, physics, mathematics, chemistry, biology, history, geography, a foreign language, drawing and draftsmanship, singing, manual work and physical culture.

To provide the younger generation with an all-round education—such is one of the basic aims of the Soviet eight-year school.

Its curriculum includes courses in the natural and exact sciences and the humanities. In the fifth to the eighth forms, 1,565 hours are allotted to the former two and 1,535 hours to the latter. The curriculum for forms five-eight covers all the important subjects studied in the complete ten-year secondary school. For instance, it comprises a full programme of studies in the Russian and native language, ancient and medieval history, physical geography, geography of the continents and major states, geography of the USSR, botany, zoology, anatomy and physiology of man, drawing, singing and music, and a considerable part of the complete secondary school curriculum in mathematics, foreign languages, literature and other subjects.

This ensures unity and continuity of eight-year and complete secondary education.

Courses in the humanities in the eight-year school (the native, Russian and foreign languages, literature, history, political geography) are

designed to give pupils some knowledge of the various nations of the world, develop their social consciousness and prepare them for taking an active part in the country's state and social life.

History, which has rightly been called "mankind's memory," is an important subject in Soviet schools. The emphasis, however, is not on history as a record of the past. The curriculum in history is designed to give an outline of the historical process, to show the decisive role played by the popular masses, reveal the laws regulating the change of socio-economic formations, inculcate respect for everything created by the labour and struggle of many generations, and to develop in the pupils noble aspirations.

Courses in literature which begin, like history, in the fifth form are of great educational value. In the seventh and eighth forms works of literature from the 19th century to the present time are studied. At literature lessons and in home assignments the pupils do various kinds of written work (writing outlines, summaries and compositions, describing the character of literary heroes).

Pupils in the fifth to eighth forms learn the basic concepts and principles of physics (such as force, work, power, acceleration, and tension of the electric field), become acquainted with the physical laws and express them in mathematical formulas and solve simple problems. They also learn the function and operation of many instruments.

Chemistry courses for the seventh and eighth forms provide a basic knowledge of substances and the atomic-molecular theory.

Courses in mathematics lessons are designed

to acquaint the pupils with the fundamentals of knowledge, to develop logical thinking, concise and clear speech, the ability to apply knowledge in practice, to make measurements, calculations and drawings, to model, to work with calculating instruments and tables, to solve problems in related fields—physics, chemistry and draftsmanship.

Besides lessons devoted to manual work and learning about the use of machines after classes, polytechnical training includes instruction in the fundamentals of industrial and agricultural production and in the use of instruments and tools at lessons.

The curricula in mathematics, physics, chemistry, biology, geography and other subjects include practice in school workshops where pupils learn how to apply their knowledge in work with actual instruments and tools.

On completing the eight-year school, pupils sit for examinations and receive certificates entitling them to take a job or continue studying in a general secondary school, or in evening secondary schools for young workers and farmers, or in various vocational or specialized secondary schools.

Complete secondary school provides students with the necessary knowledge, habits in learning and skills for beginning higher education.

The curriculum includes literature, history, social science, economic geography, a foreign language, mathematics, physics, chemistry, astronomy, biology, draftsmanship and physical culture.

In the senior forms classes are conducted on a higher scientific level. Greater emphasis is placed on the practical application of knowledge.

PROGRAMMES, CURRICULA, TEXTBOOKS

In the early Soviet years, teachers made special efforts to bridge the gap between the subjects taught at school and the demands of society.

Of interest is the curriculum planned by the People's Commissariat of Public Education for the 1920-21 academic year. It was, certainly, far from being perfect. The envisaged course of studies of the processes taking place in nature and social life had no direct relation to the question of transforming these processes in socialist conditions, and the students did not feel impelled to take part in this transformation. Nevertheless, this attempt to compose a curriculum in accordance with the modern scientific development, and the principle underlying the curricula—the unity of the learning process and the intellectual development of the students—should not be underestimated.

The 1920 curriculum allotted nearly five times as much teaching time to the natural sciences as had the pre-revolutionary Gymnasiums and over twice as much as the Realschulen. The time allotted to the social sciences was 50 per cent more than in the Gymnasiums and the Realschulen and 100 per cent more than in the commercial schools. Considerable time was devoted to esthetic and physical education.

Extensive research is carried out in the USSR for improving curricula, programmes and textbooks. The best teachers, scientists, methodologists, doctors and other specialists, research and

training institutes, the USSR Academy of Sciences and the USSR Academy of Pedagogical Sciences take part in this work.

In 1966, recommendations were drawn up for new curricula and programmes aimed at making education meet more fully the requirements of scientific, technical and cultural progress, ensuring continuity in the study of the fundamentals of sciences, achieving a more rational distribution of study material over the years and preventing unnecessary strain on the students.

The new curricula and programmes are to be introduced in secondary school not later than 1970-71.

At present a standard curriculum has been adopted and is being introduced at all levels of school education (see Appendix 2).

Its main feature is reduced compulsory tuition, the average number of daily lessons being four in primary schools and five in senior forms, more time being given to optional studies.

An additional two-three hours a week are allowed in the national schools of the union republics and autonomous republics of the Russian Federation where both the native language and Russian are taught (the latter, on a voluntary basis), as well as the literature, history and geography of the republic.

In the ninth and tenth forms pupils may choose what form of manual work they want to do. Optional studies are a flexible form of schooling which makes fuller use of the latest scientific, engineering and cultural achievements taking into account local conditions. Such amendments as are necessary are made without altering the basic curricula, programmes and textbooks of second-

ary schools. Optional studies, which the pupils undertake according to their inclinations and abilities, increase their knowledge and encourage them to learn and acquire knowledge on their own. This form of tuition is an important means of stimulating interest in science and practical activity, and prepares the pupil for self-education on leaving school.

The standard curriculum preserves the natural sciences-humanities ratio traditional in Soviet schools, with the humanities taking up 40 per cent of the tuition time.

Soviet schools devote special attention to the general cultural level of pupils. They are concerned to give the pupils a sound knowledge of the Russian language, and in national schools, the native and Russian languages. Other courses in the humanities include history, social science and economic geography of the USSR and foreign countries.

The share of natural science and the mathematical subjects has been somewhat increased (to 36.6 per cent of total tuition time as against 30 per cent in the 1959 curriculum).

Although less time is given to pictorial art, music and physical culture, this is compensated for by more time spent in different school clubs or circles, as they are called, and at extramural institutions, such as Young Pioneer Houses, children's sports schools, tourist bases, music schools, etc. of which there are more than 12,000 in the country.

Manual and technical training are based both on the country's current requirements and the future development of school education.

Manual training is of an elementary nature in

the first to the eighth forms. The children learn simple technical, agricultural and household skills.

In the ninth and tenth forms manual training is of a more complex nature, including scientific and technical practice sessions conducted in the school workshops and laboratories of nearby industrial enterprises.

Syllabuses for various subjects have been brought in line with scientific advances. Concepts reflecting new trends in science are emphasized and introduced in a way the pupils can comprehend. In mathematics, for instance, the gap between arithmetic and algebra has been reduced and a functional approach has been adopted in teaching. More attention is paid to mastering methods which are of major importance in the study of natural science and technology.

The physics courses include the theory of molecular and atomic structure of matter, the molecular-kinetic and electron theories.

In chemistry more emphasis is placed on the study of the periodic table of elements and chemical bonds. In the organic chemistry courses much attention is given to the concept of molecules' spatial structure and the electron nature of chemical bonds.

Radical changes have been introduced in the biology courses. The molecular fundamentals of genetics and selection are explained; the modern theory of the structure and function of the cell is introduced as well as the basic elements of Darwin's theory of evolution.

These changes have made it necessary to revise textbooks. Prominent scientists led by Academicians A. Kolmogorov, I. Kikoin, M. Nech-

kina, V. Khvostov and others, as well as whole collectives of teachers, methodologists and scholars are working on new textbooks. The USSR Academy of Pedagogical Sciences has conducted a series of theoretical and experimental studies and defined the requirements for textbooks in general and for individual subjects.

The emphasis is on raising the ideological and scientific levels of students, strengthening the ties between theory and practice, and encouraging the students' initiative.

Each year large number of textbooks are published in the USSR. The total number of copies printed in the country in 1968 was 1,334 million, the number of titles—75,699. The share of textbooks in the total number of books published has increased as compared with 1967 and is now 29.3 per cent (390,599 thousand copies), the number of textbook titles being 9,763 (12.9 per cent) (see Appendices 3 and 4).

PEDAGOGICAL SCIENCE

Each course conducted in school constitutes an interpretation of the fundamentals of a branch of knowledge, be it mathematics, physics, chemistry, biology, geography, history or literature. To keep abreast of the latest scientific discoveries and ideas teachers must periodically make a selection of material from the vast store of scientific information available.

In the USSR the content of school courses is considered to consist not only of selected scien-

tific facts, concepts and theories, but also in methods employed by various scientific disciplines for discovering the laws of nature and society. A knowledge of such methods helps students better to understand what they are being taught.

Great progress has been achieved in our time in the natural and social sciences. The volume of information in these fields has grown immeasurably as a result of the use of highly effective methods of research. Advances in such fields as mathematics, physics, chemistry and biology have been widely employed in many branches of technology leading to their rapid progress and increase in labour productivity.

The USSR Ministry of Public Education, the USSR Academy of Sciences and the USSR Academy of Pedagogical Sciences are carrying out much work towards improving secondary education in these fields. New material is selected for each course. Another way of raising the level of teaching is the structural rebuilding of the stages of schooling.

The first, primary stage, has been reduced from four to three forms, increasing the pace of school education. More hours are allotted to the mathematics and Russian language programmes. Nature study is now included in the second and third form syllabuses. This has been done to raise the general level of primary education.

The second, middle stage, has been expanded to include the fourth to eighth forms. This permits increasing the study material without changing the tempo of schooling, shifting certain courses from the upper forms' programmes to the lower forms, and introducing new material in a form comprehensible to the middle group of pu-

pils. To this end much new material, certain theories and scientific methods have been included in the study programmes for the purpose of increasing the students' knowledge, developing their intellect and outlook, helping them apply their knowledge in practice both at school and at work upon leaving it.

Priority is given to mathematical subjects in view of their great educational value. In the new programme for the fourth and fifth forms mathematics is represented by arithmetic with elements of algebra and geometry. Included in the section "arithmetic" are the concepts of plurality elements. These are explained with the help of concrete examples and exercises.

Algebra and geometry courses begin in the sixth form. Thus the three stages of secondary education consist of forms four and five, six, seven and eight and nine and ten. The shifting of the foundations of algebra and geometry to the fourth and fifth forms and their correlation with arithmetic greatly enhance the level of knowledge acquired. It grows further in the middle forms and rises sharply in the ninth and tenth forms where the pupils begin to study finite processes characteristic of higher mathematics. One of the topics here—"Algebra and Elements of Analysis"—includes the derivative, the integral and the fundamentals of the theory of probability as well as information on electronic computers.

The physics course has also been updated. The key theory of modern physics is the theory of the structure of matter. Physics considers matter in two forms—substance and field; to study them one must be familiar with the modern theory of atomic structure, elements of statistics, quantum

mechanics and the basic points of the theory of relativity.

The main subjects covered by the physics course are:

sixth form—molecular structure of substances; movement and forces; pressure of liquids and gases; work and power; the concept of energy;

seventh form—thermal phenomena; heat transfer and work; changing aggregate states of matter; thermal engines; electricity; structure of the atom; intensity of current, tension, resistance; work and power of electric current; electromagnetic phenomena;

eighth form—mechanics; foundations of kinematics; variable motion; Newton's laws of motion, their application; forces in nature; addition of forces; work and energy;

ninth form—molecular physics; fundamentals of the kinetic theory of gases; internal energy of ideal gas; properties of vapours; properties of solids and liquids; fundamentals of electrodynamics; electric fields; direct current; electromagnetic field; electromagnetic induction; production, transmission and utilization of electricity;

tenth form—oscillations and waves; mechanical oscillations and waves; alternating current; electromagnetic oscillations and waves; optics; light waves, geometrical optics; radiation and spectra; action of light; light quanta; fundamentals of the theory of relativity; physics of the atomic nucleus; atomic nucleus; elementary particles; nuclear energy.

The chemistry course in the secondary school unites the fundamentals of inorganic and organic chemistry. Great attention is paid to theo-

ries, which are gone into more deeply than formerly at an earlier stage. The molecular-atomic theory is introduced at the beginning of the course, this lays the foundation for understanding chemical phenomena, reactions and calculations. Study of the periodic law and periodic system of elements as well as the electrolytic dissociation theory begins one year earlier than formerly. Study of the structure of matter is conducted on a higher level. All this gives the chemistry course in the seventh and eighth forms the character of general chemistry; in the senior forms pupils have a chance to study the electron theory.

Study of heteropolar and homopolar bonds, of donor-acceptor and hydrogen bonds is carried out at a deeper level. Study of the energy of chemical processes is accompanied by study of the concept of the energy effect of reactions and its quantitative expression. This enables the student to characterize the durability of compounds (with substances consisting of two elements as examples) and show that chemical processes are governed by the law of conservation of energy.

Seventh form—elementary chemical concepts of oxygen, oxides, combustion, hydrogen, acids, salts, water, solutions.

Eighth form—basic classes of inorganic compounds; calculation of chemical formulas and equations; Mendeleyev's periodic law and periodic system of elements; structure of matter; halogens; oxygen sub-group.

Ninth form—electrolytic dissociation theory; nitrogen and phosphorus; carbon and silicon; metals.

Tenth form—introduction to organic chemist-

ry; theory of mechanical structure of organic compounds; basic classes of organic compounds.

The biology course in Soviet secondary schools is planned on the basis of the latest advances in cytology, genetics and selection. In structure this course differs from the physics and chemistry courses in that it consists of four different subjects—botany, zoology, human physiology and general biology. The study of botany, zoology and human physiology is accompained by study of new data on cytology, ecology, biocenology, genetics and the theory of evolution.

Lessons in botany, zoology and human physiology give pupils knowledge about the cell as an elementary living system forming the basis of the structure, life and growth of organisms, about the cell's structure and its chemical components, about its proteins which perform fermenting, transporting and motive functions and which are the basic building material of the cell's nucleus, cytoplasm and organs. The general biology course covers the basic facts about the structure and functions of the desoxyribonucleic acid which forms the material particles of chromosomes—the genes, the carriers of hereditary function. The second nucleic acid, ribonucleic, is also studied, as well as the role of both in the synthesis of protein.

Since all functions of the cell are accompanied by expenditure of energy, pupils are taught something about energy exchange in cells, about the adenosine-triphosphoric acid, this universal energy substance, its chemical composition and structure as well as synthesis and decomposition in the process of energy exchange.

The biology course is designed to give pupils

systematized knowledge of the basic laws of living nature.

The profound upheavals in the world today demand that the youth be given all-round ideological and political training. Such training the young people receive in school when studying all subjects, especially the humanities.

The new curriculum in history reflects the demand that history be interpreted as a single process governed by certain laws, that the teaching of history be based on scientific explanations of facts, of causes and effects, and descriptions of important events and historical personages.

Among the humanities, literature is the closest to history. It bases itself on history, supplementing and strengthening its effect not only on the intellect but also on the feelings of students forming "a man in a man."

Included in the new literature programme are comprehensive and carefully selected works by 19th century Russian writers and Soviet authors and outstanding masterpieces of world literature. These are compulsory titles for study in class and at home. In some cases the teacher and pupils in senior forms are given the right to choose one or several works for study which are not included in the compulsory list. Pupils are also required to read books related to the subject of study and selected by the teachers. These are not discussed in detail in class; the students work on them independently following the teacher's instructions.

A new Russian language programme has also been drawn up. Systematic study of Russian now begins in the fourth, not fifth, form based on approximately the same material as before. The

programme includes material on phonetics, lexicology, word formation, grammar, oral and written practice, elements of style and some general information about the history of the language.

The level of foreign languages study has been raised in two ways. First, the authors of the new programmes have furnished not only a list of grammatical phenomena but also typical phrases to illustrate them. This helps form habits of speech. Secondly, the qualitative and quantitative indicators of the ability to speak, to understand spoken speech, and to read and write have been reconsidered in accordance with the latest psychological and methodological studies. Simultaneously the material used for the oral speech development has also been changed and made more concrete.

SCHOOL AND LIFE

The Soviet secondary school prepares pupils both for continuing their education at institutes and universities and for work. These two principles are combined since training for work and for continuing education complement each other and furnish conditions for the harmonious development of personality.

In the new school curricula in the natural sciences and the humanities, great emphasis is laid on the practical application of knowledge. More time is allotted to independent experimentation, visits to plants and factories and museums and practical work.

The physics programme increases the time for laboratory work from 12 to 20 per cent in the eight-year school, and to 15 per cent in the senior forms. It also provides for visits to industrial enterprises.

In laboratories and at practical sessions students acquire habits of using various instruments and tools most frequently employed in electrical and radio wiring operations.

The chemistry programme acquaints pupils with the most important chemical plants, general production principles and the main trends in the chemical industry. The manufacture of sulphuric acid, ammonia and mineral fertilizers serves to illustrate production processes.

The importance of chemistry to the national economy is demonstrated on the basis of the development of metallurgy, production of building materials and chemicalization of agriculture. The organic chemistry course deals with the processing and production of organic products (oil, natural gas, etc.).

More time is being allotted to laboratory and practical work, during which pupils learn to handle common reagents and conduct simple analyses which may prove useful in an agrochemical or an industrial laboratory.

The pupils also learn to use a microscope, make simple preparations, work with determining agents, analyse seeds for germination, dockage, etc., conduct experiments with plants and animals and write reports on the results of their experiments.

In mathematics, pupils learn to handle instruments for measuring lengths and angles, make simple approximate calculations, use calculation

tables, the slide rule, graphs and diagrams and learn something about computer work.

Technical drawing acquaints the pupils with elements of design and preparation of basic technical documents.

Similar manual and technical skills and habits are acquired by pupils in studying other general subjects.

These courses are designed to prepare pupils for practical work. Specific technological skill is obtained during labour training which is divided into three stages—first to third forms, fourth to eighth and ninth to tenth forms.

In keeping with the children's abilities and strength, labour training in the first to eighth forms is of an elementary nature and includes working wood, metal and other materials with simple tools and devices; in rural schools simple farm work is included. As a rule this training takes place in classes, school workshops and on garden plots.

The aim of labour training in the ninth and tenth forms is to acquaint pupils with modern methods of industrial and agricultural production. It takes the form of practical sessions conducted in school workshops and laboratories and at nearby factories and farms.

Practical sessions are always linked to the subjects taught—physics, chemistry, biology. They, in fact, prepare students for practical activity.

The pupils themselves choose the kind of work they would like to do at these sessions.

Diligence and neatness, readiness to work for the common good, persistence and the ability to work independently are emphasized during all sessions.

Work done at the sessions is a form of socially useful work. The pupils manufacture teaching aids, implements and devices for school workshops and laboratories, toys for kindergartens, etc. It is the duty of headmasters and teachers to help students' organizations and to see to it that their practical work do not adversely affect their academic studies.

The programme for practical work provides for visits to industrial enterprises and film shows on production subjects and laboratory work.

Vocational training is given only in schools having adequate material facilities (e.g. schools attached to major factories, collective and state farms which provide the necessary equipment, tools, materials, instructors and work places). Pupils are taught the specialities they choose; instructions take into account the latest achievements in applied mathematics, machine-building and instrument-making, power engineering, radio engineering, construction, chemical technology, plant-growing, stock-raising, mechanization and automation, etc.

If a pupil wishes, all or part of the time for optional courses and of the time allotted for extramural activities may be used to master the speciality of his choice.

To help students choose their future profession Soviet secondary schools systematically acquaint them with various branches of national economy and cultural fields, enterprises, collective and state farms, offices and the most popular professions.

This is done during general vocational and labour training and extramural activities. Pupil's aptitudes, abilities and health as well as the cur-

rent and long-range requirements of the national economy are taken into consideration.

To help a pupil choose his future profession it is necessary to acquaint him with various professions, to give him information not only on the technology involved, but also on the working conditions, on the theoretical and practical knowledge and personal qualities required.

Vocational orientation in Soviet secondary schools is carried out in the following manner. In the fifth-eighth forms pupils learn about the main types of labour and trades; they are encouraged to develop their interests and abilities and are thus prepared for further study in either general vocational or specialized secondary schools, or other secondary educational establishments. In the ninth-tenth forms pupils come to have a better grasp of the fields they are interested in and become more confident of their choice. Pupils in senior forms get further advice on the subject.

Vocational orientation is considered an important element of educational work and is included in the school curricula. It calls for active participation on the part of school doctors, librarians, workers of public organizations, various enterprises and educational establishments other than schools. This work is supervised by the school director or by one of his assistants.

In this work it is necessary for the schools to know what kind of work is being carried out by which educational establishment, what enterprises are in need of workers and what qualifications they must have, what organizations are conducting extramural vocational work, etc. A plan is then drawn up, which calls for general school work, methodological work with teachers, con-

sultations with parents, establishment of contacts with enterprises. All these activities should be reflected in the plans of the home-room teachers as well as of other teachers and school workers.

As said earlier, pupils get some knowledge of a future trade or profession during lessons. The programmes for physics, chemistry, mathematics and other subjects of a vocational character furnish opportunities for the pupils to discover where their interests lie. For instance, at a lesson in mathematics a teacher explains how mathematics is used in modern industries, and tells about numerous professions directly linked with it (engineering, for example). Teachers of physics can also give an idea of many trades and professions while describing the fundamentals of modern production (power engineering, designing, instruments repair, etc.).

Courses in the humanities are also used in vocational orientation of pupils. The course in USSR history includes study of the history of the development of the country's national economy, the achievements of Russian and Soviet engineering, inventors and skilled workers of pre-revolutionary Russia, prominent Soviet scientists, engineers, workers and collective farmers. In studying the history of the development of Soviet national economy, pupils learn how changes in production technology affect the professional structure of society.

From the literature course students learn, among other things, about various professions including those connected with literature itself—publishing and printing (the professions of journalists, editors, proof-readers, type-setters, etc.).

Various forms and methods are used in the

work of vocational orientation: description of professions during a lesson, visits to enterprises, organizations, educational establishments and research institutions, showing of films.

An important role in this work is played by various technical and art circles. They enable pupils to get acquainted directly with certain kinds of labour and to find out about their interests and abilities. Activities in these circles are determined not only by the interests of the pupils, but also by the enterprises located in the neighbourhood. The circles are in every way encouraged to establish close ties with industrial enterprises and research institutions.

The circles help develop creative thinking on the part of the pupils, and encourage them to work on their own, to invent.

For the purpose of vocational orientation are organized pupils' brigades, camps of rest and labour and various other forms of socially useful and productive labour to be performed by pupils, excursions, contests, exhibitions, etc. Extremely popular are meetings with people in various professions and trades, open-house events held at enterprises and educational establishments, and conferences, meetings and assemblies organized to provide pupils with information on various fields of activities.

The home-room teacher plays an important role in helping pupils discover their interests, talents and other qualities. He also furnishes conditions for arousing their interests, acquaints them with various professions, and gives them and their parents advice on the subject.

In this work he is assisted by other teachers,

instructors in pupils' circles, the school librarian and doctor.

Schoolchildren extramural organizations also participate in vocational orientation of pupils—Young Pioneer Houses, young technicians' and young naturalists' stations. As a rule, members of these organizations are among the most intelligent pupils who more or less know where their interests lie and want to take part in activities that would help develop their interests and talents.

The organizational and methodological work in this field is carried out mostly by teachers colleges and advanced teachers institutes which actively participate in the work of schools in their area.

THREE ASPECTS OF EDUCATION

It is one of the goals of Soviet secondary school to achieve unity of ethical, esthetic and physical upbringing of the pupils.

In the field of ethical education Soviet schools strive to cultivate in every pupil patriotism as well as internationalism, integrity and honesty. Of great significance here are tasks specially planned to be carried out by the pupils. Performing set tasks, and especially doing socially useful work, gives the pupil a feeling of satisfaction, an opportunity to show his initiative and win the approval of his comrades and teachers.

This work is most successfully organized when it is interesting to the pupils and can be successfully carried out by them. The results are

made known to all the pupils, who are encouraged to follow the good example.

Esthetic education takes place in the course of study, work and artistic activity. Nature study, the arts, work, the learning process, in fact, the entire school life influences the development of the pupils' emotions and tastes, cultivating in them esthetic awareness.

Since they involve all the children, the lessons in class are of special importance. In the junior forms these are reading, speech lessons and nature study. Learning, when accompanied by esthetic awareness, helps develop a pupil's abilities, in particular, associative thinking which is so essential for future study and work in various fields of science, technology and the arts.

The history teacher in the fifth and sixth forms, for example, has an opportunity of developing in the pupils esthetic consciousness while describing a country. He tells about its natural conditions, about how the people work and spend their leisure time, about their art and day-to-day life.

The geography teacher sharpens the pupils' esthetic awareness when, in describing the laws of nature and the plant and animal kingdom, he urges the pupils to make their own observations when they are away from the classroom.

In teaching it often happens that one subject is used to help pupils learn about another, different, subject. For example, music is essential for sports lessons, while history, geography, natural science and foreign languages are taught with the help of pictorial art, music and literature. Many teachers of physics and mathematics make use of elements of the fine arts.

In doing so the teacher, as a rule, seeks to create an image of a phenomenon or fact, to employ the element of emotion and visualization. Much experience has been accumulated in this field in the Soviet Union.

Students benefit greatly from literature, music and art, and especially literature. Imaginative works cultivate the pupils' tastes and esthetic ideals.

With the help of radio, films and television, music has become an integral part of school life. The pupils have an opportunity of developing their musical abilities, interests and tastes, of learning to appreciate musical works.

Choral singing is the simplest form of musical activity for children. It helps to form in children a sense of responsibility for a common cause. The extensive repertoire helps to develop political and esthetic views and convictions of students without coercion and didactism, to form their esthetic requirements and tastes.

There are many types of after-school activities—amateur art circles, exhibitions, lectures, concerts, art festivals, etc.

Amateur art circles (music, dance, drama, painting and sculpture, etc.) are for pupils with serious interests in various fields of art.

Activities of such circles depend on the age of the pupils as well as the level of their general and artistic development. For instance, younger children willingly take part in various handicraft circles. Sometimes a circle is engaged in making puppets or even an entire puppet theatre; another—in making toys, etc. In these circles children learn to work with their hands and acquire certain skill in drawing and modelling.

Older children often prefer circles where they can learn technical skills—in sound recording, photography, film-making, etc. Teenagers learn to write scripts, direct films, and record music for films.

Special attention is given to fostering in the pupils good behaviour habits. In junior forms this is done mainly in the form of play. Children pay calls, greet their friends, learn table manners, and learn how to behave in the street, etc. With pupils of senior forms the emphasis is on developing awareness of one's duties to society.

Many schools invite dress designers and interior decorators to visit the classes and show the pupils what is beautiful and what is ugly.

We all know that nature is a source of man's esthetic feelings and inspires him to creative efforts. Love of nature is part of the moral make-up of man. This explains the inclusion of excursions and trips into school activities.

Physical education of the young is an issue of state importance in the Soviet Union and an essential part of the general educational scheme. Sport is compulsory for all healthy children, who may choose from a variety of fields—gymnastics, track and field, volley-ball, basket-ball, skiing, swimming, etc. Games are an important part of the sports programme.

Physical culture is closely linked with esthetic education. During sports training the instructor calls attention to the pupils' carriage, gait, coordination of movements, gracefulness.

Physical training in school is so organized that all pupils are eventually able to meet the standard set in the sports programme "Ready to Work for and Defend the USSR." Besides regu-

lar sport classes every school has what is known as "sports circles" in gymnastics, skating, skiing, swimming, etc. Those who go in for these sports usually receive sports ratings; some are granted the title of "USSR Master of Sports."

Highly popular are various sports competitions and festivals as well as school, city, republican and all-Union games. The Eleventh All-Union School Games in 1969 attracted more than 20 million young sportsmen, over seven thousand reaching the finals in the 21 events. Among them many were Masters of Sports, Candidate Masters of Sports and holders of the first sports rating.

The Soviet Government pays special attention to the development of physical culture in schools. In the last two years our schools have built (with pupils participating) some 3,000 sports grounds, 4,000 soccer fields and 15,000 volleyball and basket-ball courts. There are three thousand sports schools in the country. These schools not only train skilled sportsmen, but also serve as centres where methodological work on the physical training of schoolchildren is carried out.

EDUCATIONAL ESTABLISHMENTS SERVING YOUNG PEOPLE

The purpose of non-school educational organizations is to encourage children and young people to develop their interests and gifts and at the same time to meet their needs and requirements.

In 1968, there were in the Soviet Union 3,695

Young Pioneer Palaces and Houses, 481 young technicians' stations, 306 young naturalists' stations, 161 excursion and tourist stations, 2,217 children's sports schools, 123 theatres for children, 172 children's parks, 32 railway lines run by youngsters.

Clubs for adults usually have children's sections. More and more adults take part in non-school educational work with children and teenagers at the place of their residence.

To encourage development of the aptitudes and talents of children and teenagers, to discover the most talented and able among them, numerous competitions in mathematics, physics, chemistry, the arts and other subjects are organized. Much importance is attached to reading at home, as it develops the youngers' literary taste and curiosity, helps prepare them psychologically for socially useful labour and enhances their moral and esthetic consciousness.

Stories, novels, plays (Russian, Soviet and foreign) and science fiction for children and teenagers are printed in millions of copies in all languages of our multinational country and are sold at low prices. The "Detskaya Literatura" (Literature for Children) Publishing House, founded thirty years ago, has published 12,800 titles of books, the total number of copies exceeding 1,660 million. In 1968, 2,807 titles of books for children of pre-school and school age were printed (in a total of 208,600 thousand copies); and 39 magazines for children with a circulation of 5,900 thousand and 37 magazines for youth with a circulation of 5,600 thousand were published. One hundred and eight Komsomol newspapers are printed in nine million copies daily, and

24 Young Pioneer newspapers have a total circulation of 12,300 thousand.

In 1969, school libraries contained 402,500 thousand volumes. Besides school libraries there are 4,900 special libraries for children in the country with 104,600 thousand volumes. Many libraries for adults have children sections.

Non-school educational organizations regularly arrange meetings in which youngsters meet with scientists and writers, shock workers, skilled masters, as well as lectures and talks about books.

Each year, during the spring holidays, a "Week of Children's Books" is held throughout the country. The "Pioneria" newsreel is released each month; feature and documentary films for children are regularly produced; and radio and television carry daily programmes for schoolchildren.

Non-school educational organizations devote much attention to the esthetic education of children. Composers, musicians, writers, artists and actors are invited to take part in this work.

The number of children and teenagers going in for sports continues to increase. Besides schools, excursion and tourist stations, and children s sports schools, participating in this work are skiing stations, swimming pools and stadiums for children.

Much attention is given to children's summer holidays. In 1969, over 13 million children and adolescents spent their summer vocations in Young Pioneer and school camps, sanatoria, and at resorts. Children who remain in town during summer attend specially organized city Young Pioneer camps; they are taken on trips and ex-

cursions, participate in various sports competitions, etc.

All this extends school education and upbringing beyond what is specified in the school curricula, and helps mould the pupil's personality before he begins to work or enters a higher school.

FAMILY AND SOCIETY

The Soviet Government takes every measure to ensure that children grow up healthy, well provided for and happy, and have a proper education and upbringing.

The family is, of course, the key factor in a child's upbringing. It is the duty of parents to support their children until they become of age, to see to their health and education, to prepare them for socially useful activity, and to shape and guide their behaviour in keeping with the esthetic principles of socialist society.

The state gives parents extensive assistance in this. It provides each child with the opportunity to study, organizes creches and kindergartens for children whose parents cannot attend to them all through the day, and gives financial assistance to big families. It builds children's clinics, stadiums, Young Pioneer Palaces, theatres and cinemas for children; it trains teachers and instructors and helps parents acquire knowledge on the upbringing of children.

The socialist institutions for educating children in the Soviet Union, such as kindergartens, schools, Young Pioneer Palaces and Houses and

other similar establishments offer no opposition to the family but act as its assistants.

The Soviet state provides for its citizens free education at all levels, from primary school to university.

Secondary schools have special funds for helping the children of parents with low incomes; students at vocational schools are supported entirely by the state, while students at higher and specialized secondary schools receive monthly allowances.

In recent years many boarding schools have been opened. Until 1956 such institutions (orphanages and children's colonies) were only for children and teenagers (up to the age of 18) who needed special care either because they had no parents or because their parents for some reason were unable to look after them properly. The orphanages and colonies gave shelter and education to many homeless children after the Civil War and foreign intervention (1918-21) and after the Second World War.

The Suvorov and Nakhimov military schools are special secondary educational establishments for the sons of army and navy men and former partisans. They are fully supported by the state, wear army or navy uniforms and receive a secondary education as well as special training required for admittance to officers' schools.

Special schools are set up for handicapped children (schools for blind children or children with poor vision, children who are deaf and dumb, hard of hearing, mentally retarded children, etc.). As a rule these are boarding schools fully maintained by the state.

In many boarding schools opened in recent

years children stay at school for the five week days and go home for weekends and holidays. In "prolonged-day schools" the pupils remain at school from 8 a.m. till 6 p.m. They do their home-work there, rest, play, and attend various circles. They are looked after by teachers.

Children at boarding schools are provided with food, clothing, footwear and textbooks; the parents pay part of the cost, the amount depending on their earnings, while the state covers the rest, parents with low incomes are either exempt from payment or pay six-ten roubles a month. Prolonged-day schools provide free meals.

Boarding schools or prolonged-day schools permit the most rational organization of the educational process, with the best possible alternation of study, work, sport and recreation, as well as constant medical supervision. Various extramural activities are organized to suit the children's interests and aptitudes.

These schools are very popular, and more are built every year. In 1958, boarding schools had an enrolment of only 180,000; in 1969, the figure topped the five million mark (prolonged-day schools included). It is planned to build sufficient boarding schools so that every family that wishes to send their children there can do so.

The Soviet Government also gives much attention to evening and correspondence schools for young workers and farmers. During the last five years over two million people received an eight-year education and three million, a secondary education without leaving their jobs. This system is constantly being improved.

Three-year schools and classes have been set up inside general evening schools where skilled

workers and foremen can receive a secondary education while updating their skills. In villages there are special training centres which serve this purpose.

Students attending evening and correspondence classes enjoy certain privileges. They have an extra day off each week at half their average wages, and the school time-table is drawn up to suit their working hours.

The number of evening and correspondence students trebled in the last nine years, reaching almost the five million mark in the 1968-69 academic year.

Increasing expenditures by the state on education are vivid proof of its great concern for the younger generation.

As compared with pre-revolutionary Russia (1913) the per capita budgetary appropriation for education is today 65 times greater.

Further progress in public education envisaged by the Soviet Communist Party programme for 1970-80 will require a considerable increase in public spending for this purpose, and the Soviet Government is prepared to supply the necessary funds.

AFTER FINISHING SECONDARY SCHOOL

An important role in educating the young is played by specialized secondary schools (technikums) and vocational schools.

Recently a decision has been adopted by the Soviet Government on broadening the network

of vocational schools. The decision calls for extending the system of vocational education on the basis of eight-year schooling. Within three or four years vocational school pupils will acquire a speciality together with a secondary education.

The system of vocational education provides for planned training of young skilled workers for various branches of the national economy. Vocational schools also give those whose speciality has become obsolete an opportunity to change profession. Vocational schools admit annually some 1,300 thousand young people who have graduated from the eight-year or secondary school and wish to do production work.

At urban vocational schools students study from one to three years, while at rural vocational schools—from one to two. The main emphasis is on mastering a chosen speciality. The students spend many hours working in the school workshop or at an enterprise. At the same time they are taught some special and general subjects, this helps them master their speciality. Vocational school graduates can enter a specialized secondary school or complete their education in a general secondary school for adults without leaving their jobs. After that they can enter any institute or university.

All students of vocational schools are supported by the state. In the 1968-69 academic year there were 5,000 vocational schools in the USSR with a total enrolment of two million.

Vocational schools train workers in 1,100 trades. Modern production requirements are fully taken into account. In 1969, vocational schools trained over one million young skilled workers.

Vocational schools are classified according to their specialization. Their curricula include production training, theoretical studies, extramural and after-school activities.

All vocational schools have their own workshops. In the process of training students make instruments, apparatuses, machines, furniture, clothes, mine coal, build houses, etc.

In industry, agriculture, various cultural, educational and medical establishments, a big contribution is made by workers with a secondary specialized education.

In the USSR there are four thousand specialized secondary schools and other secondary establishments with a total enrolment of some 4,300 thousand (see Appendices 5 and 6). In 1968, over 903 thousand specialists graduated from specialized secondary schools. Students at these schools receive state stipends.

Graduates of the eight-year school can enter specialized secondary schools immediately or after several years of work. Specialized secondary schools also have evening and correspondence departments where young people can study without leaving their jobs. The term of study is either three or four years. Some specialized secondary schools base their programmes on complete general secondary school, and their term of study is shorter.

In the 1968-69 academic year specialized secondary schools took a series of measures to raise the quality of training of young specialists. Certain changes have been made in the content and organization of theoretical and vocational training on the basis of the latest achievements of science and engineering, more rational organiza-

tion of labour and better methods of teaching. All educational work is carried out in close co-operation with the enterprises, and organizations for which the specialists are trained.

A significant number of secondary school graduates go on to higher educational establishments. About one million students are admitted annually to institutes and universities (evening and correspondence departments included).

In the USSR there are three types of institutions of higher learning: the regular day department, evening department and correspondence department. The diplomas awarded by the three have identical value.

All Soviet citizens having a complete secondary education, irrespective of sex, nationality or social background, can enter any institution of higher learning in the country.

Altogether there are 794 institutions of higher learning in the country with a total enrolment of 4,500 thousand. In the USSR out of every 10,000 people 176 are students. In 1968, the country's institutes and universities graduated 511,400 young specialists (see Appendices 7 and 8).

Students studying successfully at regular day departments receive state stipends. Besides, the rectors have at their disposal special funds for helping those who need financial assistance (for instance, a student who has a family and cannot manage to live on the state stipend).

Students receiving high marks in their studies are granted stipends which are 25 per cent bigger than the usual stipend. There are also special scholarships established in honour of prominent state or public leaders, outstanding scient-

ists, writers, and artists. They are awarded to the most able students. Industrial enterprises or collective farms which send their best workers to institutions of higher learning also provide them with stipends. The number of such students is increasing with each year.

Universities train specialists in the following fields: physics, chemistry, mathematics, mechanics, biology, geology, geography, philology, history, philosophy, economics, and law.

Technical institutes train engineers in two hundred different fields.

Economists and trade and finance specialists are trained in institutes and universities as well as the engineering-economic departments of a number of technical institutes.

Those who wish to study law may enrol in law institutes or law departments at universities. Future teachers and doctors are trained in teachers colleges and medical institutes respectively. About fifty higher schools (half of these are musical) train workers in the arts.

Secondary school graduates who work can get their higher education at evening or correspondence institutes.

Students who go to evening or correspondence institutes enjoy certain privileges. For instance, first-second course students have an additional 20-day leave with full pay; students of evening secondary schools get an additional ten-day leave with full pay; students of higher and secondary correspondence schools have an additional 30-day leave to sit for their exams. Starting with the third course students of evening institutes get an additional 30-day paid leave; students of evening secondary schools—20-day paid leave

and those studying by correspondence—40-day leave.

For the time of the finals the students of correspondence and evening higher and secondary educational establishments receive an additional paid leave of 30 days; they are given two months (for secondary schools students) or four months (for the students of higher schools) to prepare and defend their graduation papers.

Beside these paid leaves, students enrolled in senior courses at higher and secondary schools can have an additional month's leave without pay in order to do practice work in their future speciality or to gather material for their graduation paper. Moreover, they have an extra day off each week at half their average wages. If they wish, they can have one or two more days off each week without pay.

Students studying by correspondence pay only fifty per cent of their travelling expenses for going to the city where their institute is located to sit for exams or to do labwork, the rest being covered by the organizations where they work.

All the students who do well in their work have the right to stop working and begin attending day lectures, to learn more about the theories and the methods of scientific and designing work.

In the USSR there are 30 correspondence and evening institutes and over a thousand correspondence and evening departments attached to institutes. Their total enrolment exceeds 2,400 thousand.

There are 210 correspondence and evening specialized secondary schools, and over 3,300 correspondence and evening sections and depart-

ments in specialized secondary schools. These schools are attended by more than 1,900 thousand students.

Correspondence and evening higher and secondary schools train specialists in nearly all fields. Large industrial enterprises and construction projects have evening and correspondence departments affiliated with correspondence and evening higher and secondary specialized schools.

TWO AND A HALF MILLION

Teachers' training in pre-revolutionary Russia was extremely inadequate. For primary schools the best qualified were graduates from teachers seminaries, but they accounted for only 10 per cent of all primary school teachers. Teachers for higher primary schools and their equivalents were trained in teachers institutes where the level of instruction was even below that of a secondary school.

Instructors in Gymnasiums, Realschulen and other secondary schools were graduates from universities or of higher teachers' training courses for women. The whole of Russia before the Revolution had 11 universities and two higher teachers' training courses for women. Universities gave no specialized training in teaching, and their graduates, as a rule, had little enthusiasm for teaching.

In Soviet times the training of highly qualified teachers was organized on a broad scale. The teachers of primary schools must be graduates of either a secondary teachers school or a pedagogi-

cal college. As a rule, teachers of the fifth-eighth forms have a higher education.

In the USSR teachers are trained in 44 universities, 206 pedagogical colleges and 408 secondary teachers schools. In the 1968-69 academic year the enrolment in teachers schools and colleges was 1,200 thousand; the number of graduates in 1969 exceeded 200,000.

Some 500,000 teachers and other specialists in the field of pedagogy are enrolled in correspondence and evening departments of higher schools in order to update their knowledge.

The history of the Ushinsky Pedagogical Institute at Yaroslavl, one of the oldest in the country, illustrates the progress that has been achieved in the field of teachers' training in Soviet times. The Institute was established in 1908 as a small educational institution. In 1911, it graduated twenty-five students, its first graduates. In ten years, from 1908 to 1918, the Institute had trained only 200 teachers.

In Soviet times the Ushinsky Pedagogical Institute became a large educational establishment. In the period from 1918 to 1968 it had trained 23,000 teachers. The Institute has five departments: history and philology, biology and geography, physics and mathematics, foreign languages, and physical culture and sports. It has a staff of over 400. The Institute trains specialists in 22 fields, and has an enrolment of 6,500.

The Institute has a library with over 600,000 volumes, two sports halls, locksmith's and carpenter workshops, and a botanical garden. A school for young lecturers has been organized where 300 students are enrolled.

At present over twelve thousand teachers are

working in the schools of the Yaroslavl Region, the majority being graduates of the Yaroslavl Pedagogical Institute.

Many of the graduates are engaged in social work. In 1967, some 800 teachers were elected deputies to regional, city, district, and village Soviets of Working People's Deputies. Many teachers, graduates of the Yaroslavl Pedagogical Institute, have been awarded orders and medals of the USSR; 120 teachers have been given the title of "Merited Teacher of the RSFSR"; 1,500 teachers have been awarded the badge "Excellent Worker of Public Education"; and 4,600 teachers are taking an active part in the work of the "Znaniye" (Knowledge) Society.

The Yaroslavl Pedagogical Institute not only satisfies the requirements in teaching personnel of the Yaroslavl Region, but also sends its graduates to other parts of the country.

USSR pedagogical institutes train their students in pedagogics, psychology, methods of teaching various subjects in school. The curricula of the institutes provide for practice work by students at schools.

Teachers for primary schools and pre-school institutions are trained in 408 teachers schools, which admit persons having a eight-year or complete secondary education.

Students with an eight-year education study all the general subjects included in the secondary school programme; their term of study is three or four years, depending on their field. Those with complete secondary education do not take general subjects, and their term of study is two years.

The teachers training programme is as follows:

Future primary school teachers take courses in the Russian language, arithmetic, history, natural science, drawing, technical drawing and manual labour, singing and physical culture, and study the methods of teaching these subjects. Those who wish to work in kindergartens and creches take courses in the Russian language, singing, drawing, and physical training, and study the methods of teaching these subjects as well as the methods of developing speech habits, conducting nature study, and teaching children how to form mathematical notions.

Both groups of students receive general pedagogical training. They take courses in anatomy, physiology of various age groups of children and hygiene, general and specialized pedagogics, psychology.

Each student does compulsory practical work at either a primary or eight-year school, or a kindergarten, depending on his field. The basic types of school practice are as follows: observations in connection with psychology and pedagogics courses, training for mastering methods of teaching certain subjects, lessons, work with children at playgrounds and in Young Pioneer camps, practical work in a school or kindergarten (replacing a teacher or an instructor).

All students enrolled in school and pre-school departments must learn to play a musical instrument—piano, violin, accordion, etc. The curricula also include optional studies—choral singing (conducting), vocal lessons, etc.

Students enrolled in teachers schools are supplied with all the necessary textbooks and teaching aids. They are given accommodations in dormitories, and receive stipends. They have free

use of the labs, study-rooms, libraries, reading halls, sports bases, stadiums, and various facilities of their school. Some students take part in amateur art circles.

Students enrolled in evening and correspondence departments enjoy all privileges given to those who study without leaving their jobs including an additional paid leave at the place of their work.

The graduates are given jobs in schools or kindergartens. They may also enter any institution of higher learning of their choice.

Teachers institutes take part in working out methods of teaching, prepare textbooks and teaching aids, and make recommendations to higher bodies on how to improve teaching and methodological work. They exchange experience with other educational establishments, their teachers and students, make visual aids, etc.

Pedagogical schools maintain close ties with their graduates, follow their work and analyze it for the purpose of further improving their system of training.

Of the pedagogical institutes in the country 287 have school departments and 201—preschool departments (some institutes have both); 24 pedagogical institutes have graphic arts departments, 78—departments of music, 61—of physical culture, and 12—of manual labour. They also have evening and correspondence departments. Besides regular pedagogical institutes there are special correspondence teachers institutes.

The total enrolment in the country's teachers institutes for the 1968-69 academic year was 289,100.

The teachers secondary school in Lukyanovo in the Gorky Region is typical of its kind in the USSR. Founded in 1929 it has trained over six thousand teachers of primary school, the majority of whom are now working in the Gorky Region.

It has a secondary school attached to it staffed by 20 teachers and attended by five hundred and ten children and teenagers.

The school has two departments: the first trains primary school teachers and the second—teachers of physical culture and sports.

In addition to general subjects as taught in regular secondary schools, the students take courses in psychology and pedagogics.

The school has 22 well-equipped study-rooms, two sports halls, a library with 40,000 volumes and a reading hall.

The students take special pride in the study-room for history, which has become the Lukyanovo museum of regional studies. It has over six thousand exhibits. The students work as guides. Within ten-odd years of its existence the museum has been visited by over 110 thousand people.

At the present rate of progress in social life, science, technology and culture no educational institution can give a student all the knowledge he would need in his future work. This is especially true in the teaching profession.

Accordingly, the Soviet education system provides for updating the knowledge and skill of teachers.

Teachers are encouraged to take correspondence and evening courses; for this they are given extra leave and travelling expenses, and released from extra duties at school. As a matter

of fact, teachers account for nearly three-quarters of the enrolment in correspondence and evening departments of pedagogical institutes.

The most capable teachers take post-graduate courses. After completing the courses and defending their theses they receive a Candidate's Degree in their field.

After this a teacher can go on and work for the Doctor's Degree. To receive this degree, he must write a dissertation investigating an urgent problem in his field and draw valid conclusions on the basis of the investigation. The dissertation, after being published, is defended by the author in an educational establishment or research institute.

The country's educational institutions actively participate in the work of improving the skill of teachers. These institutions are staffed by over 230,000 professors and teachers, including some 80,000 Doctors and Candidates of Sciences.

At present, a quarter of all the workers in various fields of science and art in the world are working in the USSR.

Such workers have all completed certain post-graduate courses. In early 1969, there were 100,000 post-graduate students in the country, of whom 56,000 were studying at higher educational establishments.

Each administrative region, territory and autonomous republic has a special teachers refresher college, and every union republic—a central teachers refresher institute. These help teachers organize their refresher studies in the best way and make known the experience of the best instructors.

Once every five years all teachers attend a re-

fresher course during which lectures are read on pedagogical and methodological problems and on major social and cultural trends. Between the courses teachers have an opportunity to examine their problems and apply what they have learned.

A good deal of pedagogical and methodological literature has been published; there are also numerous pedagogical magazines issued at republican and all-Union level. *Uchitelskaya Gazeta* (Teachers' Newspaper) is published in Moscow.

Pedagogical societies functioning in all union republics encourage teachers to work creatively. These societies organize "pedagogical lectures" on a republican and all-Union scale, district and city conferences, schools of advanced experience and meetings for exchange of experience. In 1970, more than 2,000 papers were submitted from all regions, territories, autonomous and union republics to the "pedagogical lectures" organized by the USSR Academy of Pedagogical Sciences.

Teaching is regarded as a responsible and honoured profession in the Soviet Union. Over 250,000 teachers have been awarded medals and orders, and some 24,000 of the best have won the title of "Merited Teacher of the Republic."

Many teachers hold high Government and public posts. Tens of thousands of them are deputies to the USSR Supreme Soviet, the Supreme Soviets of union and autonomous republics and local Soviets of Working People's Deputies. Today there are over two and a half million teachers in the Soviet Union.

LEADING BODIES OF SOVIET PUBLIC EDUCATION

The number of people working in research institutions and designing offices is steadily growing. The volume of scientific and technical information is expanding. All this means that workers in various fields must become more and more highly qualified, and consequently that the country's educational system must constantly be adjusted as to meet the nation's demands for trained personnel.

The leading bodies of Soviet public education are the USSR Ministry of Higher and Secondary Specialized Education, USSR Ministry of Education, USSR State Committee on Vocational Education, and the respective republican ministries and committees.

The USSR Ministry of Higher and Secondary Specialized Education is in charge of the country's institutions of higher learning, supervises and coordinates pedagogical-methodological work, and is responsible for building refresher course facilities for professors and teachers of higher schools. The Ministry directs the work of several all-Union higher educational institutions, the rest coming under republican ministries of higher and secondary specialized education, as well as other ministries and departments in respective fields.

The USSR Ministry of Education and the respective republican ministries direct the work of pre-school and non-school educational establishments, general secondary schools of all types, and the training of teachers. The USSR Ministry of Education, together with the USSR Aca-

demy of Pedagogical Sciences, is responsible for developing and perfecting the system of public education, introducing universal general secondary education, determining the content of work of general secondary school with polytechnical labour training and pre-school institutions, coordinating research in pedagogics, and rendering assistance to republican ministries of education.

School inspection work is carried out by regional, city, and district departments of public education and by the ministries of education of the union republics. They check on the work of school directors and help them solve various organizational, pedagogical, and methodological problems. School inspectors of the USSR Ministry of Education also determine the quality of training, help republican school inspectors in their work, participate in preparing curricula, textbooks, methodological material, etc.

The USSR Ministry of Education has worked out a series of measures for increasing the number of inspectors, providing them with better working conditions and higher wages.

Education in the USSR is a concern of the entire nation. That is why participating in the solution of urgent tasks confronting the Soviet school system are all citizens of the country, trade unions, youth, women's and other social organizations. They have always proved to be of great help to the schools.

INTERNATIONAL CONTACTS

The Soviet Union maintains contacts with many foreign countries and international organi-

zations in various fields of activities. Soviet specialists work in UNESCO and other UN agencies. The Soviet Union exchanges delegations of scientists, educators, and students with other countries for the purpose of studying, among other things, various problems relating to public education. Soviet specialists regularly attend international conferences and symposiums. Exhibitions devoted to various problems of public education, children's art and crafts and pedagogical and methodological literature are organized.

The international ties of the Soviet Union in the field of education are continuously expanding. Today the Soviet Union maintains contacts with 56 countries in this field.

For several years Soviet teachers have been working in foreign schools of higher education. Soviet teachers are teaching mathematics, physics, biology, chemistry, Russian and pedagogy in many countries. Many teach Russian in Cambodia, the Congo (Brazzaville), Mali, Senegal, etc.

The Soviet Union has built in Magadishu and presented to the Somali Republic a fully equipped boarding school. In 1966, the USSR built, equipped and presented as a gift to the Yemeni Republic three schools where Soviet teachers are working.

Soviet specialists have been working in many countries on UNESCO projects. For example, a Soviet team has gone to India to help improve the teaching of natural sciences in the secondary schools there. Other Soviet specialists in education are working in Tanzania, Zanzibar, Nepal and Sierra-Leone.

Each year higher and secondary school teach-

ers from various countries come to the Soviet Union to deliver lectures and acquaint themselves with the Soviet system of education.

Russian language refresher courses are held regularly in the Soviet Union for teachers from the German Democratic Republic, Poland, Hungary, Czechoslovakia, Yugoslavia, Britain, France, Finland and other countries. Our guests attend lectures on Soviet literature, culture and public education delivered by leading professors from Moscow, Leningrad and other cities. During this course much attention is given to oral practice. To this end the foreign guests are taken on excursions around the Soviet Union; they visit new housing projects in Moscow, Leningrad, Volgograd and other cities, collective and state farms, factories, exhibitions, including the USSR Exhibition of Economic Achievements in Moscow, theatres and museums.

Delegations of Soviet educators visit many countries of all continents, where they read lectures on Soviet education, and give practical assistance in reorganizing school education. In the socialist countries they work as consultants on refresher courses for Russian language teachers.

One form of Soviet international contacts consists in sending teachers and students of foreign languages to the German Democratic Republic, Britain and France to improve their knowledge. Soviet teachers colleges exchange literature and experience with their counterparts in many countries. Exchange of visits are organized for studying methods of teaching a specific subject, different forms of work with students, delivering lectures or attending conferences.

With every year the number of delegations of

Soviet schoolchildren visiting socialist countries and other neighbouring states is increasing. Soviet schoolchildren also play hosts to a growing number of children's delegations from abroad.

Great attention is given to the organization of exhibitions on public education, as well as expositions of children's drawings.

In 1966, standard exhibitions on public education were sent from the Soviet Union to 20 countries, among them India, Pakistan, Senegal, Uganda, Somali, and Ceylon. In 1967, the USSR Ministry of Public Education arranged three large exhibitions in the German Democratic Republic, the United States and Chile.

Soviet people rejoice in the achievements of many countries in eliminating illiteracy, this shameful survival of the past; they are willing to share their experience in public education.

Soviet educators' international ties promoted by common interest in many general and specific pedagogical problems will strengthen as time passes.

Conclusion

At each historical period the structure of public education reflected the specific features of political, economic and cultural development of the given country.

However, it is not enough simply to describe the activity of the various types of educational institutions; what is most important is to sum up and consider the overall results. Even the best institutions cannot provide a truly public education unless they are operated on the basis of broad democratic principles.

Within a short historical period the Soviet state has built almost anew a system of preschool education, and remodelled all types of schools—primary, secondary and higher—which give both general and vocational training.

Soviet general secondary schools provide an opportunity for discovering and developing each child's interests and abilities, for instilling in them Soviet patriotism, helping them to see life as a process of continuous creative labour and to feel happy that they can take part in this labour.

The American author Theodore Dreiser who

visited the Soviet Union in 1932 said that in his view the system of educating children in the Soviet Union was among the best and, given time, would create a new man.

Yes, education in the Soviet Union is gradually changing; it ceases to mean erudition of one who merely demands things from life and has become a weapon of one who builds life, who is creative in spirit. These words by Anton Makarenko have been confirmed by the experience of every teacher and adult in the Soviet Union.

After his visit to the Soviet Union Rabindranath Tagore wrote that in this country he had felt a profound movement of human thought, that in the USSR education of all was in the education of one. Insufficient education of one was felt by all. With the help of universal education the Soviet people succeeded in the nation-wide cause of building of a collective brain.

By the time he is seventeen a Soviet youngster has received a broad education which opens before him all roads leading to the career of his choice.

It is no exaggeration to say that the entire Soviet Union is studying and working, thinking and remaking life in order to improve the material and intellectual level of everyone, no matter where he lives or works.

Enrolment at General Schools in the Union Republics
(as of the beginning of academic year; thousand students)

	1914-15	1940-41	1968-69
USSR total	9,656	35,552	49,195
Russian Federation	5,684	20,633	26,100
Ukrainian SSR	2,607	6,830	8,459
Byelorussian SSR	489	1,737	1,829
Uzbek SSR	18	1,325	2,983
Kazakh SSR	105	1,148	3,066
Georgian SSR	157	767	972
Azerbaijan SSR	73	695	1,330
Lithuanian SSR	118	380	569
Moldavian SSR	92	440	781
Latvian SSR	172	242	351
Kirghiz SSR	7	364	723
Tajik SSR	0,4	315	699
Armenian SSR	35	333	612
Turkmenian SSR	7	252	511
Estonian SSR	92	121	210

Standard School Curriculum

Subject	Number of hours per form										Total hours per week	
	1	2	3	4	5	6	7	8	9	10	according to current curriculum	1958
1. Russian language	12	10	10	6	6	3	3	2	2	—	54	57
2. Literature	—	—	—	2	2	2	2	3	4	3	18	19
3. Mathematics	6	6	6	6	6	6	6	6	5	3	56	59
4. History	—	—	—	2	2	2	2	3	4	3	18	20
5. Social science	—	—	—	—	—	—	—	—	—	2	2	2
6. Natural science	—	2	2	2	—	—	—	—	—	—	6	6
7. Geography	—	—	—	—	2	3	2	2	2	—	11	12
8. Biology	—	—	—	—	2	2	2	2	0.2	2	11	11
9. Physics	—	—	—	—	—	2	2	3	4	5	16	17
10. Astronomy	—	—	—	—	—	—	—	—	—	1	1	1

Continued

Appendix 2

Subject	Number of hours per form										Total hours per week	
	1	2	3	4	5	6	7	8	9	10	according to curriculum	1958
11. Technical Drawing	—	—	—	—	—	1	1	1	—	—	3	4
12. Foreign language	—	—	—	—	4	3	3	2	2	2	16	20
13. Chemistry	—	—	—	—	—	—	2	2	3	3	10	11
14. Pictorial art	1	1	1	1	1	1	—	—	—	—	6	7
15. Singing and music	1	1	1	1	1	1	1	—	—	—	7	8
16. Physical culture	2	2	2	2	2	2	2	2	2	2	20	22
17. Labour training	2	2	2	2	2	2	2	2	2	2	20	28
18. Total of compulsory lessons	24	24	24	30	30	30	30	30	30	30	276	330
19. Optional lessons	—	—	—	—	—	—	2	4	6	6	—	—
GRAND TOTAL	24	24	24	30	30	30	32	34	36	36	—	—

Share of Pedagogical Literature in Total Number of Books Published

	1967		1968	
	Number of titles	Circulation (copies)	Number of titles	Circulation (copies)
Total number of books printed	74,081	1 243,551,000	75,659	1,334,005,000
Pedagogical literature for all types of educational establishments including correspondence departments	9,538	363,800,000 (29.2 per cent)	9,763	390,600,000 (29.3 per cent)
of which Pedagogical literature for general secondary school	2,484	300,900,000	2,604	317,100,000

Number of Books and Booklets for General Secondary Schools
(USSR total)

Year	Number of titles	Circulation (mln of copies)
1940	2,162	125.6
1946	1,318	87.3
1950	2,216	189.2
1960	2,565	230.0
1965	2,606	310.7
1966	2,522	285.0
1967	2,484	300.9
1968	2,691	317.1

Higher and Secondary Educational Establishments and Their Enrolment
(as of the beginning of academic year)

	Academic years							
	1914/15	1927/28	1940/41	1950/51	1960/61	1966/67	1967/68	1968/69
Higher educational institutions	105	148	817	880	739*	767	785	794
Enrolment (thousand)	127	168.5	812	1,247	2,396	4,123	4,311	4,470
Including students studying in day time	127	168.5	558	818	1,156	1,740	1,890	2,029
Secondary specialized schools	450	1,037	3,773	3,424	3,328	4,980	4,075	4,129
Enrolment (thousand)	54	189	975	1,298	2,060	3,994	4,167	4,262
Including students studying in day time	54	189	787	1,065	1,091	2,111	2,250	2,332

* In the 1950s the entire system of higher educational institutions has been perfected and as a result some teachers colleges were closed.

Enrolment in Secondary Specialized Schools in the Union Republics

(as of the beginning of academic year; thousand students)

	1914/15	1940/41	1966/67	1967/68
USSR total	54.3	974.8	3,993.8	4,166.6
Russian Federation	33.4	594.0	2,423.9	2,506.4
Ukrainian SSR	12.5	196.2	718.7	755.7
Byelorussian SSR	1.4	35.0	134.8	138.0
Uzbek SSR	0.1	25.1	122.0	138.4
Kazakh SSR	0.3	30.3	193.4	204.3
Georgian SSR	0.5	26.1	43.2	47.8
Azerbaijan SSR	0.5	17.4	65.0	69.3
Lithuanian SSR	1.5	6.4	60.9	62.1
Moldavian SSR	0.5	4.1	39.8	43.6
Latvian SSR	1.3	9.6	41.1	40.5
Kirghiz SSR	—	6.0	35.4	38.2
Tajik SSR	—	5.9	27.2	29.8
Armenian SSR	0.1	8.9	36.0	39.3
Turkmenian SSR	—	7.7	25.3	27.0
Estonian SSR	0.2	2.1	27.1	26.2

Enrolment in Higher Educational Establishments in Union Republics

(as of the beginning of academic year; thousand students)

	1914/15	1940/41	1966/67	1968/69
USSR total	127.4	811.7	4,423.2	4,469.7
Russian Federation	86.5	478.1	2,470.6	2,622.5
Ukrainian SSR	35.2	196.8	759.1	792.9
Byelorussian SSR	—	21.5	115.9	131.5
Kazakh SSR	—	19.1	188.3	224.1
Uzbek SSR	—	10.4	163.1	188.4
Georgian SSR	6.3	28.5	81.4	89.3
Azerbaijan SSR	—	14.6	78.3	95.0
Lithuanian SSR	—	6.0	50.7	54.5
Moldavian SSR	—	2.5	40.6	45.4
Latvian SSR	2.1	9.9	36.0	40.1
Kirghiz SSR	—	3.1	36.7	43.9
Tajik SSR	—	2.3	34.7	40.9
Armenian SSR	—	11.1	43.3	51.8
Turkmenian SSR	—	3.0	22.7	27.3
Estonian SSR	3.3	4.8	21.8	22.8

Appendix 8

Number of Graduates from Higher and Secondary Specialized Schools
(thousand students)

Secondary specialized schools:	1914	12.2
	1940	236.8
	1965	621.5
	1966	685.2
	1967	805.9
	1968	902.8
Higher educational establishments:		
	1914	7.4
	1940	126.1
	1965	403.9
	1966	431.8
	1967	479.5
	1968	510.6

Appendix 9

Number of Scientific Workers in the USSR
(thousand persons)

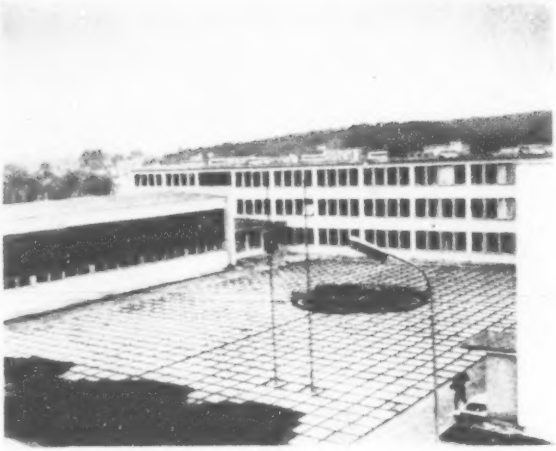
1914	11.6
1940	98.3
1947	145.6
1965	566.0
1966	712.4
1967	770.0
1968	822.9

ILLUSTRATIONS

A gym in a Moscow kindergarten. Physical training is supervised by Nina Romanenko, Master of Gymnastics.

Getting ready for a walk.

A kindergarten for miners' children in Kotla-Yarve, Estonia.

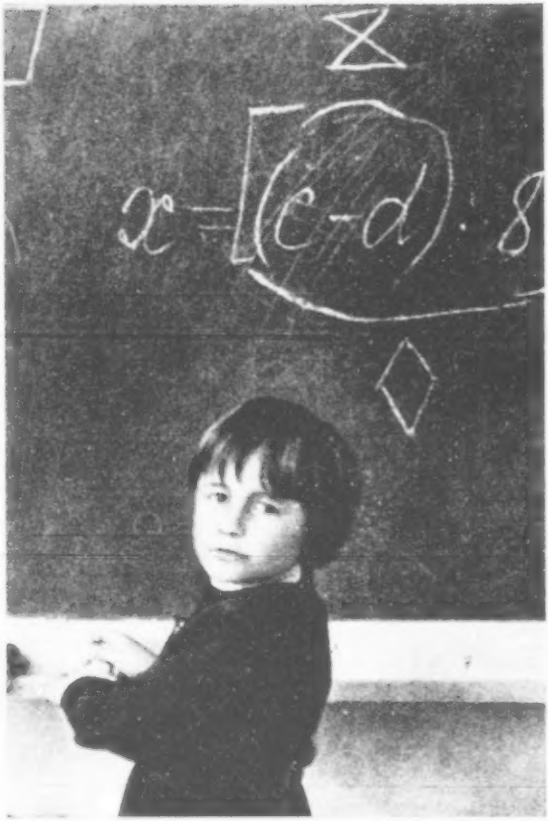


1,200 pupils attend this school in Vilnius, Latvia.

This boy wants to get into a special mathematics school.

Learning the ABC in a kindergarten run by a chemical-fibre factory in Kursk.

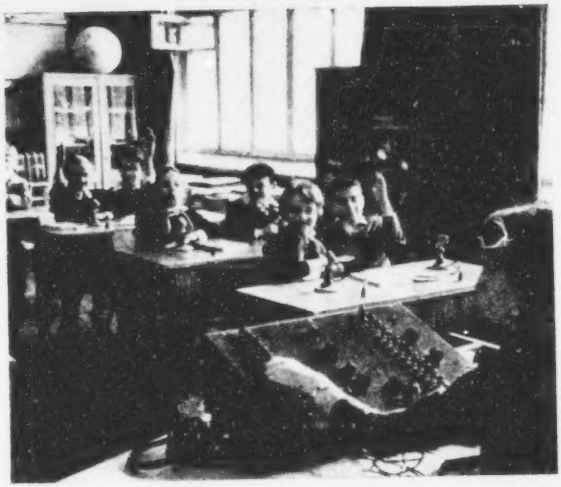
In a school.



Seven- and eight-year olds are taught algebra.

Children are fond of sports.

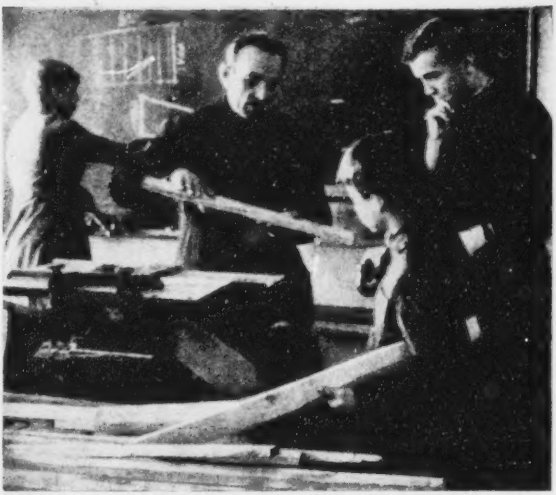
First day in school.



A German lesson.

Ye. Nikiforova, a physics teacher, in a Leningrad school.

Lively discussion.



In a school dining-room.

Playing chess at a Young Pioneer Palace.

In a school workshop in Kaminki Village (Sverdlovsk Region).

A future ballerina.

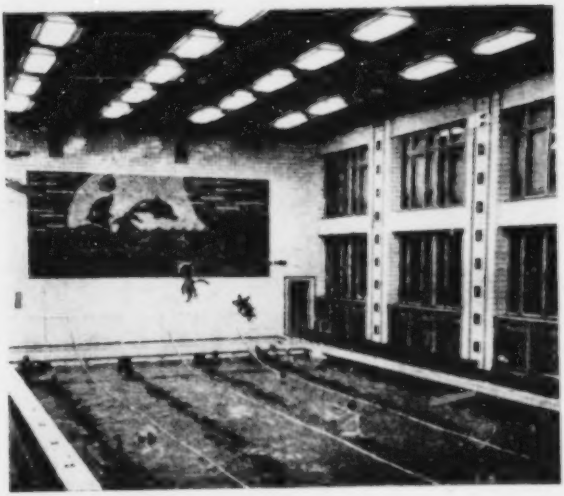
A children's arts studio in Lvov (Ukraine).

Arts school in Krasnoye Village on the Volga.

A ping-pong match at the All-Union Athletic Contest of Schoolchildren.

Young football-players of Voroshilovgrad (Ukraine).

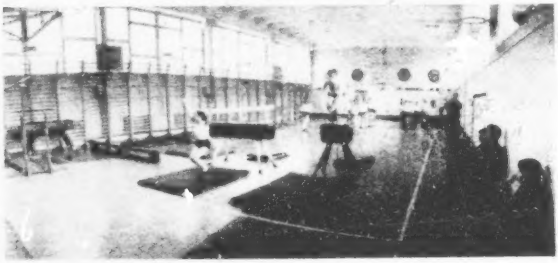
Swimming pool of the Vorkuta Palace of Young Pioneers (Russian Federation).



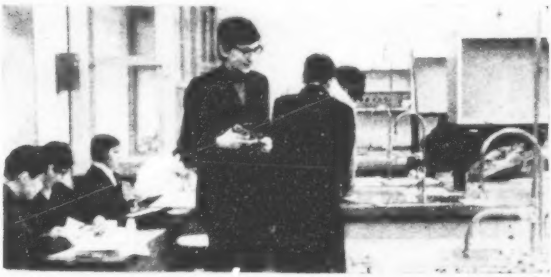
An English lesson.

Absorbed by an argument.

A typical school gym.



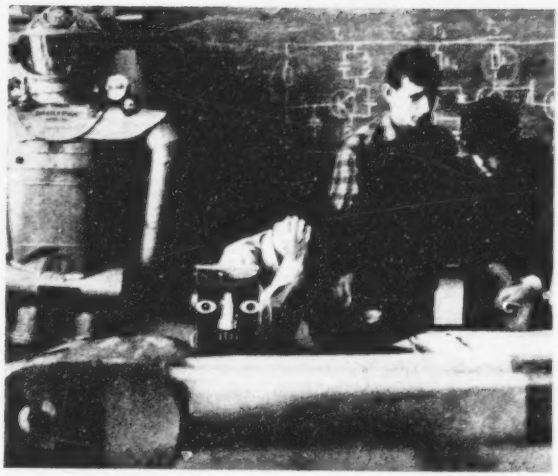
In a special physics and mathematics school in Novosibirsk.



In an automation lab at the "Integral"— a young technicians' club in Moscow.

First-formers congratulating school graduates.

A wood-carving class at the Bryansk Palace of Young Pioneers.



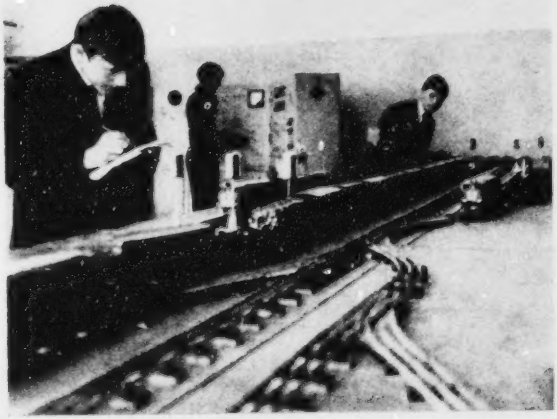
A young technicians' station in Kaliningrad.

115

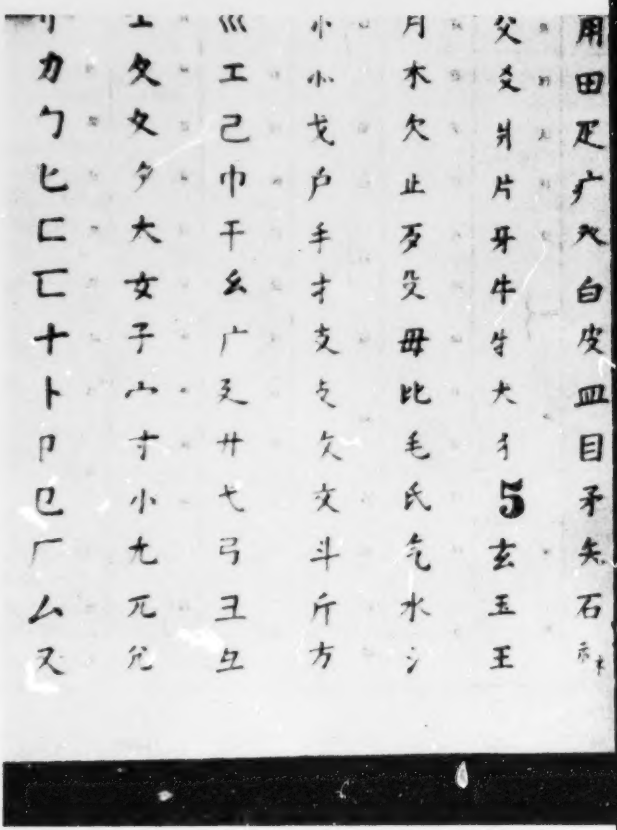
A special secondary school for future railway workers. Pupils studying signalling and block-systems

In a Moscow school for future chefs.

An evening school run by the "Zarya Kommunizma" State Farm near Moscow.



A school graduate studying Japanese.



黑齒 13 龜鼎鼓鼠 14 鼻齊 15
骨高髟門鬼禹
雨青非 9 面
是 色 酉
而 7 見角言谷豆豕豸貝赤走
自至臼舌舛舟艮色艸艸虍虫血
竹竹米糸缶网羊羽老而耒耳